

REMARKS

In an Office Action mailed on January 3, 2006, the Examiner: (1) objected to the Drawings; (2) objected to the Specification for minor informalities; (3) rejected claims 1, 16, 29, and 41 under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential steps; (4) rejected claims 1-4, 6, 12-14, 29-31, 33, 37, and 39-41 under 35 U.S.C. § 102(b) as being anticipated by Kim et al., *Macro Model and Sense Amplifier for a MRAM*, Journal of the Korean Physical Society, Vol. 41, No. 6, December 2003, pp. 896-901; (5) rejected claims 5 and 32 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim and Das et al., *A Generalized HSPICE™ Macro-Model For Pinned Spin-Dependent-Tunneling Devices*, IEEE Transactions on Magnetics, Vol. 35, No. 5, September 1999; (6) rejected claims 7, 15, and 34 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim and Maxim et al., *A Novel Behavioral Model of SPICE Macromodeling of Magnetic Components Including the Temperature and Frequency Dependencies*, IEEE, 1998; (7) rejected claim 8 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Maxim, and Lancaster et al., *Curve and Space Fitting: An Introduction*; (8) rejected claim 9 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Maxim, and Dimopoulos, *Transport Polarise En Spin Dans Les Jonctions Tunnel Magnetiques: Le Role Des Interfaces Metal/Oxyde Dans Le Processus Tunnel*; (9) rejected claim 10 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Maxim, Dimopoulos, and further in view of Lancaster; (10) rejected claims 16-20, 22, 26-28 and 38 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, and Reiss et al. *Spinelectronics and its applications*; (11) rejected claim 21 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Reiss, and Das; (12) rejected claim 23 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Reiss, and Maxim; and (13) rejected claims 24 and 25 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Reiss, Maxim, and Dimopoulos.

Applicant's representative thanks the Examiner for the telephone interview held on March 17, 2006.

By this Amendment, Applicant amends the Specification to address the objections to the Drawings. Now new matter has been added. In particular, the text of paragraph 35 of the

Specification has been amended to include a reference to reference-characters 503 and 505. Further, the text of paragraph 76 has been amended to include a reference to reference-characters 1103, 1105, and 1107. Additionally, the text of paragraph 127 has been amended to include a reference to reference-character 1919.

Applicant further amends the Specification to address the objections to the Specification because of minor informalities. In particular, the text of paragraph 31 of the Specification has been amended and the text of paragraph 40 of the Specification has been amended.

Concerning the rejection of claims 1, 16, 29, 41 under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential steps, as explained at the telephone interview, these claims relate to simulating a magnetoresistive memory device of a MRAM. In such a simulation, reference to a "read or write mode," which relates to the MRAM is not essential. Further, pursuant to MPEP § 2172.01, "[a] claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record may be rejected under 35 U.S.C. 112, first paragraph, as not enabling." MPEP § 2172.01. Contrary to this requirement, Applicant nowhere discloses a "read or write mode" of the MRAM to be essential to the invention. Accordingly, Applicant for these reasons, respectfully requests the Examiner to withdraw the rejection of claims 1, 16, 29, 42, and claims 2-15, 17-28, and 30-40.

Regarding the rejection of claims 1-4, 6, 12-14, 29-31, 33, 37, and 39-41 under 35 U.S.C. § 102(b) as being anticipated by Kim, as explained at the telephone interview, in combination with other limitations of these claims, Kim does not teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Instead, Kim is directed to a macro model for a MRAM in which datum 1 or 0 is determined by only the direction of the current flows and whether a certain amount of current flows. (page 899, col. 1, ll. 3-9). In particular, as long as the sum of the fields created by the current flowing in a bit line and a digit line is sufficient to change the polarization of the MTJ soft layer than the datum is changed. (page 899, col. 1, ll. 15-20). There is no teaching or suggestion in Kim of the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Thus, for at least this reason Kim does not anticipate the subject matter of claims 1-4, 6, 12-14, 29-31, 33, 37, and 39-41. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claims 1-4, 6, 12-14, 29-31, 33, 37, and 39-41 under 35 U.S.C. § 102(b).

With respect to the rejection of claims 5 and 32 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim and Das, as explained above Kim fails to teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Das does not cure the deficiency of teachings of Kim in this respect. Thus, even if combined with Kim (which it cannot be) the combination does not teach the subject matter of claims 5 and 32. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claims 5 and 32 under 35 U.S.C. § 103(a).

Concerning the rejection of claims 7, 15, and 34 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim and Maxim, as explained above Kim fails to teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Maxim does not cure the deficiency of teachings of Kim in this respect. In particular, Maxim relates to improved modeling of magnetic components such that the saturation and hysteresis aspects of the magnetic components are not neglected. (See Abstract). Thus, even if combined with Kim (which it cannot be) the combination does not teach the subject matter of claims 7, 15, and 34. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claims 7, 15, and 34 under 35 U.S.C. § 103(a).

Regarding the rejection of claim 8 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Maxim, and Lancaster, as explained above Kim fails to teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. As explained above, Maxim does not cure the deficiency of teachings of Kim in this respect. Thus, even if combined with Kim (which it cannot be), the combination does not teach the subject matter of claim 8. Moreover, Lancaster also fails to cure the deficiencies of teachings of Kim in this respect since Lancaster relates to the "method of least squares" and does not teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Thus, the purported combination of Kim, Maxim, and Lancaster does not teach the subject matter of claim 8. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claim 8 under 35 U.S.C. § 103(a).

With respect to the rejection of claim 9 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Maxim, and Dimopoulos, as explained above Kim fails to teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. As explained above, Maxim does not cure the deficiency of teachings of Kim in this respect. Thus,

even if combined with Kim (which it cannot be) the combination does not teach the subject matter of claim 9. Furthermore, Dimopoulos also fails to teach or suggest the subject matter of claim 9, since Dimopoulos relates to transport mechanisms in magnetic tunnel junctions and does not teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Thus, the purported combination of Kim, Maxim, and Dimopoulos does not teach the subject matter of claim 9. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claim 9 under 35 U.S.C. § 103(a).

Concerning the rejection of claim 10 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Maxim, Dimopoulos, and further in view of Lancaster, as explained above Kim fails to teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. As explained above, none of Maxim, Dimopoulos, and Lancaster cures the deficiency of teachings of Kim in this respect. Thus, even if combined with Kim (which it cannot be), the combination does not teach the subject matter of claim 10. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claim 10 under 35 U.S.C. § 103(a).

Regarding the rejection of claims 16-20, 22, 26-28, and 38 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, and Reiss, as explained above Kim fails to teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Reiss does not cure the deficiency of teachings of Kim in this respect. In particular, Reiss relates to an explanation of basic physics related to Tunnel Magneto Resistance (TMR) based systems and does not teach or suggest the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Thus, even if combined with Kim (which they cannot be), the combination does not teach the subject matter of claims 16-20, 22, 26-28, and 38. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claims 16-20, 22, 26-28, and 38 under 35 U.S.C. § 103(a).

With respect to the rejection of claim 21 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Reiss, and Das, as explained above Kim fails to teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. As explained above, Das and Reiss do not cure the deficiency of teachings of Kim in this respect. Thus, even if combined with Kim (which they cannot be) the combination does not teach the subject matter of claim 21.

Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claim 21 under 35 U.S.C. § 103(a).

Concerning the rejection of claim 23 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Reiss, and Maxim, as explained above Kim fails to teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Reiss and Maxim do not cure the deficiency of teachings of Kim in this respect. Thus, even if combined with Kim (which they cannot be) the combination does not teach the subject matter of claim 23. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claim 23 under 35 U.S.C. § 103(a).

Regarding the rejection of claims 24 and 25 under 35 U.S.C. § 103(a) as being obvious over a combination of Kim, Reiss, Maxim, and Dimopoulos, as explained above Kim fails to teach the dependence of a bit state upon a specific sequence of a plurality of operating conditions. Reiss, Maxim, and Dimopoulos do not cure the deficiency of teachings of Kim in this respect. Thus, even if combined with Kim (which they cannot be) the combination does not teach the subject matter of claims 24 and 25. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claims 24 and 25 under 35 U.S.C. § 103(a).

For at least the reasons given above, Applicant requests allowance of pending claims 1-36 and 38-41 over the cited references. The Office Action contains numerous statements characterizing the claims, the Specification, and the prior art. Regardless of whether such statements are addressed by Applicant, Applicant refuses to subscribe to any of these statements, unless expressly indicated by Applicant. Should issues remain that might be subject to resolution through a telephonic interview, the Examiner is requested to telephone the undersigned at (512) 996-6839.

If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 503079, Freescale Semiconductor, Inc.

Respectfully submitted,

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